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Disadvantages and Limitations of Chatgpt: A Critical Review

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ABSTRACT
ChatGPT is a generative artificial intelligence (AI) system designed to understand natural language and generate human-like responses. Since its public introduction, it has been increasingly used in education, research, business, software development, customer service, and everyday communication. Despite its usefulness, ChatGPT also has several limitations and disadvantages. These include inaccurate or fabricated information, dependence on training data, bias, privacy concerns, academic misuse, reduced human interaction, overdependence on artificial intelligence, cyber security concerns, and limitations in reasoning and contextual understanding. This paper critically reviews the major disadvantages of ChatGPT and discusses their possible effects on students, teachers, researchers, organizations, and society. The paper also suggests responsible approaches for using ChatGPT while maintaining human judgment, verification, privacy, and academic integrity.

KEYWORDS
ChatGPT, Artificial Intelligence, Generative AI, AI Limitations, Privacy, Academic Integrity, Bias, Education

1. INTRODUCTION

Artificial Intelligence has become an important part of modern digital technology. Recent developments in natural language processing and machine learning have resulted in generative AI systems capable of producing text, images, computer programs, summaries, and other forms of content. ChatGPT is one of the most widely recognized conversational AI systems.

ChatGPT can assist users in writing, learning, brainstorming, programming, translation, summarization, and information retrieval. Its conversational interface makes AI accessible to users without advanced technical knowledge. Students can use it for explanations and study assistance, researchers can use it for organizing ideas, and organizations can use it for communication and productivity.

However, the increasing use of ChatGPT also creates several challenges. The system does not guarantee that every generated statement is factually correct. It may produce plausible but incorrect information, particularly when questions require highly specialized, current, or context-dependent knowledge. Users may therefore incorrectly assume that fluent responses are always reliable.

Another important issue is overdependence. Students and professionals may begin to rely on AI for tasks that require independent thinking, creativity, analysis, and decision-making. Excessive dependence may reduce opportunities to develop these skills. Therefore, understanding the disadvantages of ChatGPT is essential for responsible AI adoption. This paper examines its major limitations and their implications for individuals and society.

2. OBJECTIVES OF THE STUDY

The major objectives of this research paper are:

1. To examine the major disadvantages of ChatGPT.
2. To study the accuracy and reliability limitations of AI-generated information.
3. To analyze privacy and security concerns associated with AI systems.
4. To examine the impact of ChatGPT on education and academic integrity.
5. To discuss issues related to bias and misinformation.
6. To study the possibility of overdependence on AI.
7. To identify responsible strategies for using ChatGPT.
8. To provide recommendations for students, teachers, researchers, and organizations.

3. RESEARCH METHODOLOGY

This paper follows a review-based research methodology. Information has been organized from published research, technical literature, institutional guidance, and documented discussions concerning generative AI.

The study focuses on the following areas:

- Accuracy and reliability
- Hallucination and misinformation
- Privacy
- Security
- Bias
- Academic integrity
- Dependence on AI
- Human interaction
- Employment and workplace implications
- Ethical concerns

The paper uses a qualitative approach to discuss the potential benefits and limitations of ChatGPT rather than evaluating a single software version or model.

4. MAJOR DISADVANTAGES OF CHATGPT

4.1 Generation of Incorrect Information

One of the most important limitations of ChatGPT is that it can generate incorrect information. The language generated by an AI model may appear logical and well-written even when some statements are inaccurate.

For example, ChatGPT may provide an incorrect date, technical specification, citation, formula, or historical detail. Users who do not verify the information may unknowingly use incorrect material. This problem becomes particularly important in academic, medical, legal, engineering, and scientific applications. Information in these fields often requires precise evidence and authoritative references.

Therefore, AI-generated information should be treated as assistance rather than automatically accepted as verified fact.

4.2 AI Hallucinations

The term AI hallucination is commonly used to describe situations in which an AI system generates information that is unsupported, fabricated, or incorrect.

For example, an AI system may create:

- Non-existent research papers
- Incorrect references
- False quotations
- Incorrect statistics
- Invented historical events
- Non-existent websites or organizations

The problem is particularly serious for students and researchers because fabricated references can enter assignments, dissertations, research papers, and reports. Users should therefore verify important claims through reliable books, journals, government publications, institutional websites, and original research papers.

4.3 Dependence on AI

Excessive dependence on ChatGPT can affect independent thinking.

Students may use AI to generate:

- Assignments
- Essays
- Laboratory reports
- Presentations
- Programming code
- Answers to examination questions

If students simply copy AI-generated material without understanding it, their learning may become superficial. Education is not only about obtaining an answer. It also involves understanding concepts, solving problems, developing arguments, communicating ideas, and learning from mistakes.

Therefore, ChatGPT should ideally function as a learning assistant rather than a complete replacement for student effort.

4.4 Impact on Critical Thinking

Critical thinking requires a person to analyze information, compare evidence, identify assumptions, and reach a reasoned conclusion. If users regularly allow AI to perform these tasks, they may spend less time practicing independent analysis. For example, instead of researching multiple sources and developing their own argument, student may ask ChatGPT for an immediate answer. Although this can save time, excessive use may reduce opportunities to practice research and analytical skills.

The impact depends strongly on how the technology is used. Using AI to obtain explanations, alternative viewpoints, or feedback can support learning, while using it as a substitute for thinking can weaken learning.

4.5 Academic Misuse

The use of ChatGPT in education has created concerns regarding academic integrity.

Students may submit AI-generated content as their own work without disclosure. This creates difficulties for teachers because conventional assignments may no longer accurately demonstrate a student's independent abilities.

Academic misuse may include:

- Copying AI-generated essays
- Submitting AI-generated assignments
- Generating answers during examinations
- Using AI-generated references without verification
- Presenting AI-generated research as original work

Educational institutions therefore need clear policies concerning acceptable and unacceptable AI use.

4.6 Privacy Concerns

Privacy is another important issue.

Users may unintentionally enter sensitive information into an AI system, such as:

- Personal identification information
- Confidential business information
- Private correspondence
- Student records
- Research data
- Financial information
- Passwords or access credentials

Users should carefully consider what information they provide to AI systems and follow the privacy policies and organizational rules applicable to their situation. Confidential information should not be entered into an AI tool unless the user is authorized to do so and appropriate safeguards are in place.

4.7 Bias in AI Responses

AI systems learn patterns from large collections of data. If the underlying data contains biases, the generated output may sometimes reproduce or amplify those biases. Bias may occur in relation to:

- Gender
- Culture
- Language
- Geography
- Profession
- Social groups
- Historical perspectives

AI-generated responses should therefore be critically evaluated, particularly when discussing controversial or socially sensitive topics.

4.8 Lack of Human Understanding

ChatGPT can communicate in a human-like manner, but human-like language should not be confused with human understanding. The system does not possess human experiences in the same way people do. It generates responses based on learned patterns and the information available to it. Human professionals can consider organizational context, personal experiences, ethical responsibilities, non-verbal communication, and real-world consequences in ways that an AI system cannot fully replicate. Consequently, important decisions should remain under appropriate human supervision.

4.9 Outdated or Incomplete Information

AI systems may have limitations concerning the timeliness and completeness of information, depending on the model, tools, and context being used. Technology, laws, scientific findings, product specifications, and current events can change rapidly. Therefore, information that was accurate previously may become outdated. For

current information, users should consult authoritative and recently updated sources.

4.10 Cyber security Concerns

Generative AI can have both defensive and potentially harmful cyber security applications. It can help legitimate users understand security concepts, analyze code, and identify common vulnerabilities. However, AI-generated content can also potentially be misused to create convincing phishing messages, malicious code, social-engineering content, or other harmful material.

Organizations should therefore establish security policies governing AI use and monitor how AI tools interact with confidential systems and data.

4.11 Reduced Human Interaction

Excessive dependence on conversational AI may reduce some forms of human interaction.

For example, users may increasingly rely on AI for:

- Advice
- Communication
- Writing
- Problem solving
- Emotional conversation

Human interaction provides social learning, empathy, cooperation, negotiation, and relationship-building experiences that AI cannot completely replace.

AI should therefore complement rather than replace meaningful human relationships.

4.12 Employment and Workforce Concerns

Generative AI may automate or partially automate some tasks traditionally performed by humans.

Potentially affected activities include:

- Routine content writing
- Basic customer support
- Data summarization
- Translation
- Documentation
- Basic programming
- Administrative communication

However, the effect on employment is complex. AI may also create new roles and increase demand for people who can manage, evaluate, integrate, and govern AI systems. The major challenge is therefore not simply whether AI will replace jobs, but how workers and educational institutions will adapt to changing skill requirements.

5. EFFECTS ON EDUCATION

ChatGPT has created both opportunities and challenges for education.

Positive uses

- Explaining difficult concepts
- Generating practice questions
- Providing examples
- Supporting brainstorming
- Improving language skills
- Assisting with programming
- Providing feedback on drafts

Potential negative effects

- Reduced independent learning
- Academic dishonesty
- Incorrect information
- Reduced writing practice
- Dependence on automated answers

- Difficulty evaluating genuine student work

6. EFFECTS ON RESEARCH

ChatGPT can support researchers in several ways, including brainstorming research questions, improving language, summarizing concepts, and organizing ideas. However, researchers should be careful about:

1. Fabricated references.
2. Incorrect scientific claims.
3. Unverified statistical statements.
4. Copyright and attribution issues.
5. Confidential research data.
6. Lack of transparency about AI use.

Research conclusions should always be supported by appropriate evidence and verified against original sources. AI should assist researchers, but it should not replace scientific methodology, experimentation, peer review, or scholarly judgment.

7. ETHICAL ISSUES

The rapid development of generative AI has introduced several ethical questions.

7.1 Responsibility

When AI produces incorrect information, responsibility for its use ultimately depends on the humans and organizations deploying it. Users must verify important outputs before acting on them.

7.2 Transparency

In academic and professional contexts, users may need to disclose significant AI assistance according to applicable institutional policies.

7.3 Intellectual Property

AI-generated content can raise questions about copyright, authorship, attribution, and the use of training data.

7.4 Fairness

AI systems should be developed and used in ways that reduce discriminatory outcomes and provide fair treatment across different groups.

7.5 Human Oversight

High-impact decisions should include appropriate human review rather than relying exclusively on automated output.

8. STRATEGIES FOR RESPONSIBLE USE OF CHATGPT

The disadvantages of ChatGPT can be reduced through responsible use.

8.1 Verify Important Information

Users should check important facts using reliable primary or authoritative sources.

8.2 Protect Confidential Information

Sensitive personal, institutional, financial, and research information should not be entered without appropriate authorization and safeguards.

8.3 Use AI as a Learning Tool

Students should use ChatGPT to understand concepts, generate practice questions, receive explanations, and obtain feedback rather than simply copying answers.

8.4 Maintain Human Judgment

Important academic, professional, financial, legal, medical, and organizational decisions should receive appropriate human review.

8.5 Develop AI Literacy

Students, teachers, researchers, and employees should understand both the

capabilities and limitations of generative AI.

9. DISCUSSION

ChatGPT represents an important development in human-computer interaction. Its ability to generate natural-language responses makes it useful in education, research, business, programming, and communication. However, usefulness does not mean reliability in every situation. AI systems can generate errors, reflect biases, produce fabricated information, and provide incomplete responses. The fluent presentation of information can make these problems difficult for inexperienced users to identify.

The most important issue is therefore the relationship between human judgment and AI assistance. AI can increase productivity when users understand its limitations. At the same time, uncritical dependence may create educational, ethical, privacy, and professional risks. The appropriate approach is not necessarily to reject AI technology but to develop responsible methods for using it. Verification, transparency, privacy protection, critical thinking, and human oversight are essential components of responsible AI use.

10. RECOMMENDATIONS

Based on this review, the following recommendations are proposed:

1. Users should verify important AI-generated information.
2. Students should avoid submitting AI-generated content as their own work when prohibited by institutional policies.
3. Educational institutions should establish clear AI-use guidelines.
4. Researchers should verify all AI-generated references and factual claims.
5. Confidential information should be protected when using AI systems.
6. Organizations should develop responsible AI policies.
7. Human review should be maintained for high-impact decisions.
8. AI literacy should be included in modern education and professional training.
9. Users should develop independent analytical and problem-solving skills alongside AI use.
10. AI should be treated as an assistance tool rather than an unquestionable authority.

11. CONCLUSION

ChatGPT has significant potential to improve productivity, education, communication, and access to information. However, its disadvantages cannot be ignored. Incorrect information, hallucinations, bias, privacy risks, academic misuse, overdependence, cyber security concerns, and limitations in human understanding are important challenges. The technology itself is neither a complete replacement for human intelligence nor an unquestionable source of information. Its effectiveness depends largely on how people use it.

Responsible use requires users to verify information, protect sensitive data, maintain independent thinking, follow academic and professional policies, and apply human judgment. Educational institutions and organizations should also develop appropriate guidelines for AI use. In conclusion, the most effective approach is to use ChatGPT as a supportive tool while retaining human responsibility, critical thinking, ethical judgment, and verification. Properly managed, AI can complement human capabilities without unnecessarily replacing the skills and responsibilities that remain essential to individuals and society.

REFERENCES

1. OpenAI. ChatGPT and Generative AI: Technical and User Documentation.
2. UNESCO. Guidance for Generative AI in Education and Research.
3. National Institute of Standards and Technology (NIST). Artificial Intelligence Risk Management Framework.
4. European Commission. Ethics Guidelines and Policy Frameworks for Trustworthy Artificial Intelligence.
5. Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? Proceedings of the ACM Conference on Fairness, Accountability, and Transparency.
6. Bommasani, R., et al. (2021). On the Opportunities and Risks of Foundation Models.
7. Kasneci, E., et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. Learning and Individual Differences.
8. Dwivedi, Y. K., et al. (2023). So what if ChatGPT wrote it? Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI. International Journal of Information Management.
9. UNESCO. Artificial Intelligence and Education: Guidance for Policy-makers.
10. National Institute of Standards and Technology. Artificial Intelligence Risk Management Framework (AI RMF 1.0).